

Town of Hull

Hull Retirement System

Actuarial Valuation Report

As of January 1, 2016

Issued December 2016



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December 9, 2016

Personal and Confidential

Ms. Lauren Dunham  
Retirement Board Administrator  
Hull Retirement Board  
253 Atlantic Avenue  
Hull, MA 02045

Dear Ms. Dunham:

We have performed an actuarial valuation of the Hull Retirement System as of January 1, 2016 for the fiscal year ending June 30, 2018. The purposes of the valuation are to review the experience of the plan during the period that ended December 31, 2015 and to determine the employer cash contribution amount for the fiscal year ending on June 30, 2018. The employee data and financial information used in this valuation were provided by the Town of Hull and by the Hull Retirement System and were not audited by us, but were reviewed by us for reasonableness.

This report has been prepared in accordance with generally accepted actuarial principles and practices, and fairly reflects the current actuarial position of the plan. In our opinion, each of the actuarial assumptions used is reasonable and represents our best estimate of expected long-term trends.

The basic valuation results as of January 1, 2016 are as follows:

### January 1, 2016 Valuation Summary


	<u>January 1, 2016</u>	<u>January 1, 2014</u>	<u>Change</u>
Actuarial Accrued Liability	65,494,475	64,528,515	965,960
Actuarial Value of Assets	<u>38,527,396</u>	<u>34,820,803</u>	<u>3,706,593</u>
Unfunded Actuarial Liability	26,967,079	29,707,712	(2,740,633)
Gross Normal Cost	1,804,346	1,473,101	331,245
Contribution Fiscal 2018	3,762,961	3,739,627	23,334
Year Plan Achieves Full Funding	2032	2031	1 year
Amortization Increase	3.74%	3.80%	-0.06%
Funding Ratio	58.83%	53.96%	4.87%
Discount Rate Assumption	7.75%	7.75%	0.00%
Salary Increase Assumption	4.50%	4.50%	0.00%

We refer you to Section I of this report for a detailed summary and commentary on the results of the valuation and a comparison with the prior valuation. Section II is a summary of the plan provisions, and Section III describes the actuarial cost method and assumptions. Calculation details, supporting data and disclosures are provided in Exhibits A through G.

We will be pleased to answer any questions that you may have regarding this actuarial valuation report.

The signing actuaries are members of the Society of Actuaries, the American Academy of Actuaries and other professional actuarial organizations and meet their "General Qualification Standards for Statements of Actuarial Opinion" to render the actuarial opinion contained herein. Further, in our opinion, the assumptions as approved by the Town are reasonably related to the experience and expectations of the postemployment benefits programs.

Very truly yours,



Parker E. Elmore, ASA, EA, MAAA, FCA  
President, CEO & Actuary

Enclosure

## ACTUARIAL CERTIFICATION

This is to certify that Odyssey Advisors has conducted an actuarial valuation of certain benefit obligations of the Hull Retirement System. This valuation was performed as of January 1, 2016. This valuation was based on member data as of December 31, 2015. The data provided to us by the Town was reviewed for reasonableness but was not audited by us.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions, changes in economic and demographic assumptions, increases or decreases expected as part of natural operation of the methodology used for these measurements such as additional contribution requirements based on the plan's funded status and changes in plan provisions or applicable law. As part of this valuation, we have not performed an analysis of the potential range of future measurements. Determinations for purposes other than meeting plan funding requirements may yield results significantly different than those reported here.

To the best of our knowledge, this report is complete and accurate and in our opinion represents the information necessary to comply with GASB Statements Number 43 and 45 with respect to the benefit obligations addressed. The signing actuaries are members of the Society of Actuaries, the American Academy of Actuaries and other professional actuarial organizations and meet their "General Qualification Standards for Statements of Actuarial Opinion" to render the actuarial opinion contained herein. Further, in our opinion, the assumptions as approved by the Hull Retirement System are reasonably related to the experience and represent our best estimate of anticipated experience of the system. As such, I believe this report represents an accurate valuation & forecast of the actuarial status of the system performed in accordance with generally accepted actuarial principles and practices relating to pension plans.



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Parker E. Elmore, ASA, EA, FCA, MAAA  
President, CEO & Actuary

## SECTION I

### PRINCIPAL RESULTS OF THE VALUATION

	<u>January 1, 2016</u>	<u>January 1, 2014</u>
<b><u>Summary of Results</u></b>		
I. Actuarial Accrued Liability		
a. Actives	27,852,505	28,974,709
b. Inactives	342,470	487,749
c. Retirees/Beneficiaries	<u>37,299,500</u>	<u>35,066,057</u>
d. Total	65,494,475	64,528,515
II. Actuarial Value of Plan Assets	<u>38,527,396</u>	<u>34,820,803</u>
III. Unfunded Actuarial Accrued Liability	26,967,079	29,707,712
IV. Eighteen month adjustment	<u>1,264,905</u>	<u>1,393,456</u>
V. Adjusted Unfunded Actuarial Accrued Liability	28,231,984	31,101,168
VI. Funded Ratio	58.83%	53.96%
VII. Normal Cost		
a. Gross Normal Cost	1,804,346	1,473,101
b. Expected Employee Contributions	<u>924,198</u>	<u>855,847</u>
c. Net Normal Cost	880,148	617,254
d. Eighteen Month Adjustment	60,073	42,130
e. Administrative Expense Assumption	<u>150,000</u>	<u>150,000</u>
f. Adjusted Normal Cost & Expense	1,090,221	809,384
VIII. Net 3(8)(c) Payments	125,000	125,000
IX. Funding Amortization of UAAL	2,524,406	2,534,480
X. Interest Adjustment for August 1st payment date	<u>23,334</u>	
XI. Contribution Amount for fiscal year 2018	3,762,961	3,468,864
XII. Contribution Amount for fiscal year 2018 from prior schedule	<u>3,739,627</u>	
XIII. Change in Contribution Amount for fiscal year 2018	23,334	

**SECTION I**  
**PRINCIPAL RESULTS OF THE VALUATION**  
(continued)

**Membership Information**

	<b><u>January 1, 2016</u></b>	<b><u>January 1, 2014</u></b>
I. Actives		
a. Number of Participants	177	178
b. Total Compensation	9,701,015	9,293,846
c. Average Annual Compensation	54,808	52,213
d. Average Attained Age	50.67	51.89
e. Average Past Service	10.74	12.89
II. Inactives		
a. Number of Participants	31	36
III. Retirees/Beneficiaries		
a. Number of Participants	143	130
b. Total Annual Payments	3,866,007	3,430,987

**B. Commentary on Plan Experience and Contribution Amounts**

- (1) Plan experience was, in aggregate, more favorable than anticipated during the period ending December 31, 2015. The significant actuarial experience factors occurring during the year were as follows:
  - (a) The estimated annual rate of return on plan assets during the period was approximately 7.48% on a market value basis. The actuarial value basis rate of return during the period was less than the assumed long-term rate of return of 16.10% during the period (7.75% per year over the two year period), thereby resulting in an actuarial loss of approximately \$3,075,650 from this source alone.
- (2) The January 1, 2016 market value of plan assets of \$38,527,396 was less than the actuarial present value of all accumulated plan benefits of \$65,494,475 determined on an ongoing plan basis as of January 1, 2016. The ratio of plan assets to the actuarial present value of accumulated plan benefits (ongoing plan basis) was 58.83% as of January 1, 2016.



B. Commentary on Plan Experience and Contribution Amounts (continued)

- (3) The unfunded actuarial liability (UAL) and funded ratio are measures of the plan's funded status. These measures reflect the plan's position as of January 1, 2016. These figures are not meant to represent the amount necessary to settle plan liabilities nor should they be used to determine the need for future contributions. With that said, the UAL and the funded ratio along with the plan's funding schedule are appropriate for assessing the amount of future contributions. The UAL in this valuation reflects the market value of assets. As of January 1, 2016, UAL is \$26.97 million and the funded ratio is 58.83%.

## SECTION II

### SUMMARY OF PLAN PROVISIONS

Participant:

Participation is mandatory for all full-time employees whose employment commences prior to age 65. There are three (3) classes of members in the retirement system:

Group 1: General employees

Group 2: Employees in specified hazardous occupations (e.g., electricians)

Group 4: Police & Firefighters

Member Contributions:

Member contributions vary depending upon date hired as follows:

<b>Hire Date</b>	<b>Member Contribution Rate</b>
Prior to 1975	5.0% of pay
1975 to 1983	7.0% of pay
1984 to June 30, 1996	8.0% of pay
July 1, 1996 & beyond	9.0% of pay

Members hired on or after January 1, 1979 shall contribute an additional 2.0% on any compensation in excess of \$30,000 (Teachers participating in the "Retirement Plus" program are not subject to this additional withholding – N/A for this valuation.).

"Regular Interest" on Contributions:

Members shall have interest credited on their contributions at the rate off 3.0% per year.

## SECTION II

### SUMMARY OF PLAN PROVISIONS

(continued)

Pay:

- |                |  |
|----------------|--|
| a. Pay         | Gross regular compensation excluding bonuses, overtime, severance pay, unused sick pay and other similar compensation.   |
| b. Average Pay | The average of pay during the three (3) consecutive years that produce the highest average or, if greater, during the last three years (whether or not consecutive) preceding retirement. For those who became Members on or after April 2, 2012, the average pay shall be based on the five (5) consecutive years that produce the highest average rather than three (3) years. |

Credited Service

Period during which an employee contributes to the retirement system plus certain periods of military service and "purchased" service.

## SECTION II

### SUMMARY OF PLAN PROVISIONS

(continued)

#### Service Retirement:

##### a. Eligibility

An employee hired before April 2, 2012 shall become eligible to retire under this plan upon attainment of age 55 as an active member and completion of 10 years of service or an employee shall be able to retire with 20 years of service regardless of age. An employee hired prior to 1978 or a member of Group 4, shall become eligible upon attainment of age 55. Group 1 Members hired on or after April 2, 2012 shall be eligible to retire upon attainment of age 60 with 10 years of creditable service.

##### b. Retirement Allowance

Determined as the product of the member's benefit percentage, average pay and credited service, where the benefit percentage is shown below (maximum allowance is 80% of average pay):

For those who became Members prior to April 2, 2012

<b>Benefit Percentage</b>	<b>Group 1</b>	<b>Group 2</b>	<b>Group 4</b>
2.50%	65+	60+	55+
2.40%	64	59	54
2.30%	63	58	53
2.20%	62	57	52
2.10%	61	56	51
2.00%	60	55	50
1.90%	59	N/A	49
1.80%	58	N/A	48
1.70%	57	N/A	57
1.60%	56	N/A	56
1.50%	55	N/A	45

## SECTION II

### SUMMARY OF PLAN PROVISIONS

(continued)

- b. Retirement Allowance (continued) For those who became Members on or after April 2, 2012

For Members with less than 30 years of Creditable Service

<b>Benefit</b>			
<b>Percentage</b>	<b>Group 1</b>	<b>Group 2</b>	<b>Group 4</b>
2.500%	67+	62+	57+
2.350%	66	61	56
2.200%	65	60	55
2.050%	64	59	54
1.900%	63	58	53
1.750%	62	57	52
1.600%	61	56	51
1.450%	60	55	50

For Members with at least 30 years of Creditable Service

<b>Benefit</b>			
<b>Percentage</b>	<b>Group 1</b>	<b>Group 2</b>	<b>Group 4</b>
2.500%	67+	62+	57+
2.375%	66	61	56
2.250%	65	60	55
2.125%	64	59	54
2.000%	63	58	53
1.875%	62	57	52
1.750%	61	56	51
1.625%	60	55	50

In addition, qualified veterans will receive an additional \$15 per year for each year of credited service up to 20 years.

## SECTION II

### SUMMARY OF PLAN PROVISIONS

(continued)

#### Deferred Vested Retirement:

- |    |                      |   |
|----|----------------------|---|
| a. | Eligibility          | Completion of 10 years of credited service.   |
| b. | Retirement Allowance | Determined in the same manner as Service Retirement with the benefit payable upon attainment of age 55, unless deferred until a later age at the option of the member.<br><br>Member contributions with interest may be withdrawn after separation of service. If contributions are withdrawn, eligibility for retirement benefits is forfeited. The interest rate for Members hired before 1984 who voluntarily withdraw their contributions with less than 10 years of service will be 3.0%. Interest payable on all other withdrawals will be set at regular interest. |

#### Ordinary Disability Retirement:

- |    |                      |   |
|----|----------------------|---|
| a. | Eligibility          | Non-job related disability after completion of 10 years of Credited Service.  |
| b. | Retirement Allowance | Determined in the same manner as Service Retirement with the benefit payable immediately (if the Member is less than age 55, they are deemed to be age 55 for purposes of their retirement allowance). Qualified Veterans shall receive 50% of pay (during their final year) plus an annuity based on accumulated member contributions with interest. |

## SECTION II

### SUMMARY OF PLAN PROVISIONS

(continued)

#### Accidental Disability Retirement:

- |                         |  |
|-------------------------|--|
| a. Eligibility          | Disabled as a result of an accident in the performance of duties. There is no age or service requirement.  |
| b. Retirement Allowance | 72% of pay plus an annuity based on accumulated member contributions with interest. Also, a dependent's allowance per year for each child shall be provided. Total allowance shall not exceed 100% of pay (75% of pay for those hired after 1987). |

#### Non-Occupational Death:

- |                         |   |
|-------------------------|---|
| a. Eligibility          | Dies while in active service, but not due to an occupational injury. The member must have at least 2 years of Credited Service.   |
| b. Retirement Allowance | Benefit as if Option C had been elected. Minimum monthly benefits shall be provided as follows:<br>spouse - \$250, 1 <sup>st</sup> child - \$120, each additional child - \$90. |

## SECTION II

### SUMMARY OF PLAN PROVISIONS

(continued)

#### Occupational Death:

- |    |                      |  |
|----|----------------------|--|
| a. | Eligibility          | Dies as a result of an occupational injury.  |
| b. | Retirement Allowance | <p>An immediate payment to a named beneficiary equal to the accumulated deductions at the time of death, plus a pension equal to 72% of current salary and payable to the surviving spouse, dependent children or the dependent parent, plus a supplement of \$846.12 per year, per child (or \$312.00 per year in systems in which the local option contained in G.L. c. 32, s. 9(2)(d)(ii) has not been adopted), payable to the spouse or legal guardian until all dependent children reach age 18 or 22 if a full time student, unless mentally or physically incapacitated.</p> <p>The surviving spouse of a member of a police or fire department or any corrections officer who, under specific and limited circumstances detailed in the statute, suffers an accident and is killed or sustains injuries while in the performance of his duties that results in his death, may receive a pension equal to the maximum salary for the position held by the member upon his death.</p> <p>In addition, an eligible family member may receive a one-time payment of \$150,000.00 from the State Retirement Board.</p> |



## SECTION II

### SUMMARY OF PLAN PROVISIONS

(continued)

#### Cost-of-Living Increases:

An increase of up to 3.0% applied to the first \$13,000 of annual benefit (previously \$12,000). Funded by the Municipality from Fiscal Year 1999. Percentage increase is voted on each year by the Retirement Board. Cost-of-living increases granted during Fiscal Year 1982 through Fiscal Year 1998 shall be reimbursed by the Commonwealth.

#### Optional Forms of Payment:

- a. Option A Monthly allowance payable for the life of the member.
- b. Retirement Allowance Monthly allowance payable for the life of the member with a guarantee of remaining member contributions with interest.
- c. Option C Monthly allowance payable for the life of the member. Upon the death of the member, 66-2/3% of such allowance shall continue to the member's beneficiary until their death. In the event the beneficiary shall predecease the member, the allowance amount shall "pop-up" to the non-reduced amount.

#### Non-Vested Termination:

A member who voluntarily terminates employment with less than 10 years of service will receive interest on their Annuity Savings account at the annual rate of 3.0% upon withdrawal of such funds and will have no further benefits payable from the Plan.

#### Funding:

The plan is funded by a combination of Employer and Participant contributions.

### SECTION III

#### ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS

##### A. Actuarial Cost Method

For purposes of calculating funding contribution amounts, the actuarial cost method used to calculate the costs and liabilities of the plan is the **Entry Age Normal Method**. A method under which the actuarial present value of the projected benefits for individuals included in the actuarial valuation is allocated on a level basis over the service of the individual between entry age and assumed exit ages. The portion of this actuarial present value allocated to a valuation year is called the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is called the actuarial liability. The portion of the actuarial liability exceeding the actuarial value of the assets is called the unfunded actuarial liability. Under this method the following occur:

- (i) Individual Entry Age Normal Costs and Actuarial Liabilities are added together to form the total Entry Age Normal Cost and Actuarial Liability.
- (ii) The entry age for a participant is established as the individual's age on the first valuation date the participant was eligible to enter the Plan.
- (iii) The actuarial gains (losses), Plan amendments and changes in actuarial assumptions, as they occur, reduce (increase) the existing unfunded actuarial liability.

All employees who are plan participants on a valuation date are included in the actuarial valuation

##### B. Asset Valuation Method

The actuarial value of plan assets as of a valuation date is equal to the market value of plan assets on the valuation date, as reported by the Retirement Board, plus any receivable contributions.

SECTION IIIACTUARIAL COST METHOD, ASSET VALUATION METHOD  
AND ACTUARIAL ASSUMPTIONS

(continued)

C. Fiscal Year Adjustment

The actuarial results are adjusted by the valuation interest rate and salary scale to the beginning of Fiscal 2018. The unfunded actuarial accrued liability is rolled forward with normal cost and further adjusted by anticipated contributions and interest.

D. Actuarial Assumptions*Mortality**Healthy Life Mortality*

It is assumed that both pre-retirement and post-retirement mortality are represented by the RP-2000 Mortality Table (sex distinct) projected to 2017 with Scale AA.

*Disabled Life Mortality*

It is assumed that both pre-retirement and post-retirement mortality are represented by the RP-2000 Mortality Table (sex distinct) projected to 2010 with Scale AA (set forward 2 years).

*Investment Return*

7.75% per year, net of expenses.

The investment return assumption is a long term assumption and is based on capital market expectations by asset class, historical returns, and professional judgment. We considered analysis prepared by the Town's investment advisor using a building block approach which included expected returns by asset class, risk analysis, and the determination of a 30 year expected target rate of return.

SECTION IIIACTUARIAL COST METHOD, ASSET VALUATION METHOD  
AND ACTUARIAL ASSUMPTIONS

(continued)

<i>Compensation Increases</i>	4.50% per year.
<i>Cost-of-Living Increases</i>	A 3.0% COLA on the first \$13,000 of a member's annual retirement allowance is assumed to be granted each year.
<i>Regular interest rate</i>	A 3.5% interest rate is assumed to be credited to a member's annuity savings account each year.
<i>Administrative Expenses</i>	An estimated annual expense of \$150,000 for the 2018 Fiscal Year excluding management fees and custodial expenses is added to the Normal Cost.

### SECTION III

#### ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS

(continued)

#### *Employee Termination*

The rates shown represent the withdrawal assumption for those not yet eligible to retire:

<u>Service</u>	<u>Non Public Safety Male</u>	<u>Non Public</u>	<u>Public Safety</u>
		<u>Safety Female</u>	
0	15.00%	15.00%	1.50%
5	7.60%	7.60%	1.50%
10	5.40%	5.40%	1.50%
15	3.30%	3.30%	0.00%
20	2.00%	2.00%	0.00%
25	1.00%	1.00%	0.00%
30	0.00%	0.00%	0.00%

#### *Disability*

The rates shown represent the disability assumption:

<u>Age</u>	<u>Non Public Safety Male</u>	<u>Non Public</u>	<u>Public Safety</u>
		<u>Safety Female</u>	
20	0.01%	0.01%	0.10%
25	0.02%	0.02%	0.20%
30	0.03%	0.03%	0.30%
35	0.06%	0.06%	0.30%
40	0.10%	0.10%	0.30%
45	0.15%	0.15%	1.00%
50	0.19%	0.19%	1.25%
55	0.24%	0.24%	1.20%
60	0.28%	0.28%	0.85%

Disability is assumed to be 25% ordinary and 75% accidental for Groups 1 & 2 and 10% ordinary and 90% accidental for Group 4.

### SECTION III

#### ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS

(continued)

*Retirement Age*

The rates shown represent the retirement assumption:

<u>Age</u>	<u>Non Public Safety Male</u>	<u>Non Public Safety Female</u>	<u>Public Safety</u>
45	0.00%	0.00%	1.00%
46	0.00%	0.00%	1.00%
47	0.00%	0.00%	1.00%
48	0.00%	0.00%	1.00%
49	0.00%	0.00%	1.00%
50	1.00%	1.50%	2.00%
51	1.00%	1.50%	2.00%
52	1.00%	2.50%	2.00%
53	1.00%	2.50%	5.00%
54	2.00%	2.50%	7.50%
55	2.00%	5.50%	15.00%
56	2.50%	6.50%	10.00%
57	2.50%	6.50%	10.00%
58	5.00%	6.50%	10.00%
59	6.50%	6.50%	15.00%
60	12.00%	5.00%	20.00%
61	20.00%	13.00%	20.00%
62	30.00%	15.00%	25.00%
63	25.00%	12.50%	25.00%
64	22.00%	18.00%	30.00%
65	40.00%	15.00%	100.00%
66	25.00%	20.00%	100.00%
67	25.00%	20.00%	100.00%
68	30.00%	25.00%	100.00%
69	30.00%	20.00%	100.00%
70	100.00%	100.00%	100.00%
71	100.00%	100.00%	100.00%
72	100.00%	100.00%	100.00%

SECTION IIIACTUARIAL COST METHOD, ASSET VALUATION METHOD  
AND ACTUARIAL ASSUMPTIONS

(continued)

*Family Composition*

Member are assumed to be married with 2 dependent children (one male, one female – both age 15). The male spouse is assumed to be three (3) years older than his partner.

*Step Increases*

Step increases are assumed to be part of the salary increase assumption.

*3(8)(c)*

Net 3(8)(c) payments are added to the contribution amount (not included in the Accrued Liability). They are assumed to remain constant at \$125,000 .

*Contribution Timing*

Contributions are assumed to be made on August 1<sup>st</sup> of each fiscal year.

*Valuation Date*

January 1, 2016.

## EXHIBIT A

### Development of Actuarial Gain or (Loss)

Actuarial gains or (losses) occurring during the preceding year are determined as of each valuation date. Both the magnitude and sources of gains or (losses) are monitored over time in order to assess the reasonableness of actuarial assumptions.

<b>Calculation of Liability Gain /( Loss)</b>	
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Accrued Liability at January 1, 2014	64,528,515
Total Gross Normal Cost during period	3,012,492
Total Distributions & reimbursements during period	8,211,891
Expected Accrued Liability at December 31, 2015	69,360,816
Actual Accrued Liability at January 1, 2016	<u>65,494,475</u>
Gain / (Loss) from demographics during period	3,866,341

<b>Calculation of Asset Gain /( Loss)</b>	
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Assets at January 1, 2014	34,820,802.53
Total Contributions & reimbursements during period	8,453,886.15
Total Distributions & reimbursements during period	8,211,890.97
Total Net Expected Investment Income during period	6,540,248.29
Expected Assets at December 31, 2015	41,603,046.00
Actual Assets at January 1, 2016	<u>38,527,396.08</u>
Gain / (Loss) from Asset Performance during period	(3,075,649.92)
Total Gain / (Loss) during period	790,691.08



## EXHIBIT B

### Statement of Assets

Based upon information furnished by the Hull Retirement System, and by the Town of Hull, the assets of the plan as of December 31, 2015 are summarized as follows:

Assets at January 1, 2014	34,820,802.53
Contributions during 2014	
4891 Member deductions	952,973.12
4892 Transfers from other systems	92,581.49
4893 Member make-up payments	22,382.44
4900 Member payments from rollovers	0.00
4898 3(8)(c ) Reimbursements	(359.46)
4899 Commonwealth COLA reimbursement	64,126.89
4894 Pension Fund Appropriation	3,402,834.00
4897 Federal Grant Reimbursement	25,407.96
Total Contributions	4,559,946.44
Expenses during 2014	
5757 Refunds to members	64,954.87
5756 Transfers to other systems	147,882.70
5750 Annuities paid	455,286.13
5751 Pensions Paid	3,037,163.18
5755 3(8)(c ) Reimbursements to other systems	28,658.88
Total Distributions	3,733,945.76
Net Investment Income	2,434,280.73
Assets at December 31, 2014	38,081,083.94
Contributions during 2015	
4891 Member deductions	945,611.18
4892 Transfers from other systems	148,880.10
4893 Member make-up payments	11,112.47
4900 Member payments from rollovers	0.00
4898 3(8)(c ) Reimbursements	139,573.25
4899 Commonwealth COLA reimbursement	(15,840.21)
4894 Pension Fund Appropriation	3,468,864.00
4897 Federal Grant Reimbursement	21,739.60
Total Contributions	4,719,940.39
Expenses during 2015	
5757 Refunds to members	321,823.68
5756 Transfers to other systems	109,470.77
5750 Annuities paid	529,564.79
5751 Pensions Paid	3,254,233.58
5755 3(8)(c ) Reimbursements to other systems	262,852.39
Total Distributions	4,477,945.21
Net Investment Income	204,316.96
Assets at December 31, 2015	38,527,396.08

## EXHIBIT C

### Demographic Information

#### **Age and Service Distribution of Active Plan Participants**

<u>Age</u>	<u>Service</u>							<u>Total</u>	<u>Total</u> <u>Compensation</u>	<u>Average</u> <u>Compensation</u>
	<u>0 - 4</u>	<u>5 - 9</u>	<u>10 - 14</u>	<u>15 - 19</u>	<u>20 - 24</u>	<u>25 - 29</u>	<u>30 +</u>			
<20	0	0	0	0	0	0	0	0	0	0
20 - 24	5	0	0	0	0	0	0	5	42,758	8,552
25 - 29	9	0	0	0	0	0	0	9	378,538	42,060
30 - 34	7	4	1	0	0	0	0	12	694,776	57,898
35 - 39	4	2	4	0	0	0	0	10	695,805	69,581
40 - 44	9	4	3	1	0	0	0	17	927,347	54,550
45 - 49	9	2	7	4	1	0	0	23	1,197,326	52,058
50 - 54	8	5	6	5	1	3	3	31	1,866,537	60,211
55 - 59	5	3	9	8	1	2	1	29	1,639,693	56,541
60 - 64	3	4	8	5	1	1	4	26	1,504,716	57,874
65 - 69	0	3	1	0	4	1	0	9	506,021	56,225
70 +	<u>2</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>2</u>	<u>0</u>	<u>6</u>	<u>247,497</u>	<u>41,250</u>
Total	61	28	40	23	8	9	8	177	9,701,015	54,808

Average Attained Age 50.67

Average Past Service 10.74

## EXHIBIT C

### Demographic Information (continued)

Disabled Members				Retired Members & Beneficiaries				Total Members in Pay Status			
Age	Number	Average Benefit	Total Benefits	Age	Number	Average Benefit	Total Benefits	Age	Number	Average Benefit	Total Benefits
<20	0	0	0	<20	0	0	0	<20	0	0	0
20 - 24	0	0	0	20 - 24	0	0	0	20 - 24	0	0	0
25 - 29	0	0	0	25 - 29	0	0	0	25 - 29	0	0	0
30 - 34	0	0	0	30 - 34	0	0	0	30 - 34	0	0	0
35 - 39	0	0	0	35 - 39	0	0	0	35 - 39	0	0	0
40 - 44	0	0	0	40 - 44	0	0	0	40 - 44	0	0	0
45 - 49	0	0	0	45 - 49	1	20,677	20,677	45 - 49	1	20,677	20,677
50 - 54	0	0	0	50 - 54	4	33,358	133,430	50 - 54	4	33,358	133,430
55 - 59	2	42,163	84,325	55 - 59	5	11,171	55,853	55 - 59	7	20,025	140,178
60 - 64	1	36,141	36,141	60 - 64	22	34,156	751,429	60 - 64	23	34,242	787,570
65 - 69	5	34,549	172,745	65 - 69	26	34,296	891,686	65 - 69	31	34,336	1,064,430
70 - 74	4	25,545	102,182	70 - 74	19	23,633	449,033	70 - 74	23	23,966	551,215
75 - 79	6	31,895	191,372	75 - 79	19	24,820	471,579	75 - 79	25	26,518	662,951
80 - 84	3	22,089	66,266	80 - 84	11	18,127	199,393	80 - 84	14	18,976	265,659
85 +	<u>2</u>	<u>21,234</u>	<u>42,467</u>	85 +	<u>13</u>	<u>15,187</u>	<u>197,429</u>	85 +	<u>15</u>	<u>15,993</u>	<u>239,897</u>
Total	23	30,239	695,498	Total	120	26,421	3,170,509	Total	143	27,035	3,866,007

## EXHIBIT C

### Demographic Information (continued)

#### **History of Active Plan Participants**

<b>Valuation Year</b>	<b>Number of Participants</b>	<b>Average Age</b>	<b>Average Service</b>	<b>Average Annual Pay</b>
2016	177	50.67	10.74	54,808
2014	178	51.89	12.89	52,213
2012	178	50.30	12.80	51,624
2010	171	49.00	12.40	50,905
2008	187	47.90	11.40	47,563
2006	186	46.80	10.50	43,969
2004	165	46.90	11.20	45,136
2003	166	46.40	11.10	42,633
2002	165	46.40	11.30	39,770

## EXHIBIT D

### Supplementary Information Required under Governmental Accounting Standards Board Statement No. 25

#### **Schedule of Funding Progress**

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded AAL ("UAAL")	Funded Ratio	Covered Payroll	UAAL as % of Covered Payroll
01/01/2016	38,527,396	65,494,475	26,967,079	58.83%	9,701,015	277.98%
01/01/2014	34,820,803	64,528,515	29,707,712	53.96%	9,293,846	319.65%
01/01/2012	26,210,257	59,993,728	33,783,471	43.69%	9,189,068	367.65%
01/01/2010	22,241,000	52,498,000	30,257,000	42.37%	8,705,000	347.58%
01/01/2008	26,259,000	51,011,000	24,752,000	51.48%	8,894,000	278.30%
01/01/2006	19,173,000	44,706,000	25,533,000	42.89%	8,178,000	312.22%

#### **Notes to Schedules**

Additional information as of the latest actuarial valuation:

Valuation Date:	January 1, 2016
Actuarial Cost Method	Entry Age Normal
Amortization Method	Approximate level percent of payroll (closed)
Remaining Amortization Period	15 years for the fresh start base
Asset Valuation Method	Market value of assets (adjusted by accounts payable & receivable)
Actuarial Assumptions:	
Investment Rate of Return	7.75% per year
Projected Salary Increases	4.50% per year

## EXHIBIT E

### PERAC Disclosure Information

#### **PERAC Information Disclosures**

The most recent actuarial valuation of the System was prepared by Odyssey Advisors, Inc. as of January 1, 2016

The Expected Annual Employee Contributions on that date was:	924,198	9.53% of payroll
The Net Normal Cost for the Employer as of that date was:	880,148	9.07% of payroll

The Actuarial Accrued Liability for Active members was:	27,852,505	
The Actuarial Accrued Liability for Inactive members was:	342,470	
The Actuarial Accrued Liability for Retired members was:	<u>37,299,500</u>	
The Total Actuarial Accrued Liability as of that date was:	65,494,475	
The Retirement System assets as of that date were:	<u>38,527,396</u>	
Unfunded Actuarial Accrued Liability as of that date:	26,967,079	

The ratio of the system's assets to total actuarial accrued liability as of that date:	58.83%	
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As of that date, the total covered payroll was:	9,701,015	
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The principal actuarial assumptions used in the valuation are as follows:

Actuarial Cost Method:	Entry Age Normal (level % of pay)
Annual Investment Return:	7.75% per annum
Rate of Salary Increase:	4.50% per annum

## EXHIBIT E

### PERAC Disclosure Information (continued)

#### **Schedule of Funding Progress**

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded AAL ("UAAL")	Funded Ratio	Covered Payroll	UAAL as % of Covered Payroll
01/01/2016	38,527,396	65,494,475	26,967,079	58.83%	9,701,015	277.98%
01/01/2014	34,820,803	64,528,515	29,707,712	53.96%	9,293,846	319.65%
01/01/2012	26,210,257	59,993,728	33,783,471	43.69%	9,189,068	367.65%
01/01/2010	22,241,000	52,498,000	30,257,000	42.37%	8,705,000	347.58%
01/01/2008	26,259,000	51,011,000	24,752,000	51.48%	8,894,000	278.30%
01/01/2006	19,173,000	44,706,000	25,533,000	42.89%	8,178,000	312.22%

## EXHIBIT F

### Hull Retirement System Funding Schedule

Fiscal Year	Net Normal Cost	Unfunded Actuarial Accrued Liability	Funding Amortization of UAAL	Net 3(8)(c) Payments	Interest for installment payments	Scheduled Contribution	Prior Schedule	Change from Prior Schedule
2017	845,806	30,780,606	2,630,790	125,000	22,473	3,624,069	3,601,596	22,473
2018	1,090,221	28,231,984	2,524,406	125,000	23,334	3,762,961	3,739,627	23,334
2019	1,139,281	27,699,915	2,618,889	125,000	24,230	3,907,400	3,883,170	24,230
2020	1,190,549	27,024,806	2,716,897	125,000	25,161	4,057,607	4,032,446	25,161
2021	1,244,124	26,191,772	2,818,561	125,000	26,130	4,213,815	4,187,685	26,130
2022	1,300,110	25,184,635	2,924,018	125,000	27,137	4,376,265	4,349,128	27,137
2023	1,358,615	23,985,815	3,033,408	125,000	28,185	4,545,208	4,517,023	28,185
2024	1,419,753	22,576,219	3,146,877	125,000	29,274	4,720,904	4,691,630	29,274
2025	1,483,642	20,935,116	3,264,577	125,000	30,407	4,903,626	4,873,219	30,407
2026	1,550,406	19,040,006	3,386,665	125,000	31,586	5,093,657	5,062,071	31,586
2027	1,620,174	16,866,475	3,513,305	125,000	32,811	5,291,290	5,258,479	32,811
2028	1,693,082	14,388,041	3,644,664	125,000	34,086	5,496,832	5,462,746	34,086
2029	1,769,271	11,575,989	3,780,918	125,000	35,411	5,710,600	5,675,189	35,411
2030	1,848,888	8,399,189	3,922,248	125,000	36,790	5,932,926	5,896,136	36,790
2031	1,932,088	4,823,904	4,068,855	125,000	38,224	6,164,167	6,125,943	38,224
2032	2,019,032	813,565	813,565	125,000	18,454	2,976,051	1,761,873	1,214,178
2033	2,109,888	0	0	125,000	13,945	2,248,833	1,835,532	413,301
2034	2,204,833	0	0	125,000	14,537	2,344,370	1,912,506	431,864
2035	2,304,050	0	0	125,000	15,156	2,444,206	1,992,944	451,262
2036	2,407,732	0	0	125,000	15,803	2,548,535	2,077,001	471,534
2037	2,516,080	0	0	125,000	16,479	2,657,559	2,164,841	492,718

#### Amortization of Unfunded Actuarial Accrued Liability as of July 1, 2017

Year	Type	Original Amortization Amount	Percentage Increasing	Original # of Years	Current Amotization Amount
2018	Fresh Start	2,524,406	3.74%	15	2,524,406